

In the Claims:

1. (Currently Amended) A method of processing a data signal, the method comprising:
receiving a data sequence incorporating PSK symbols,
separating the data sequence into bits of symbols,
assigning a confidence value to each bit in a symbol, and
effecting convolutional decoding of the bit stream associated with the assigned confidence values.
2. (Original) A method according to claim 1 wherein the step of assigning a confidence value comprises mapping symbols to binary bits by means of a Gray code.
3. (Currently Amended) A method according to claim 1,
further comprising incorporating data ~~on the mapping determination~~ from the step of assigning in a look-up table for reference.
4. (Previously presented) A method according to claim 1 comprising re-coding hard decisions as an (I,Q) pair and taking soft decisions therefrom.
5. (Currently Amended) A method according to claim 1 comprising demodulation by decision feedback ~~equalisation~~ equalization with whitening matched filtering.
6. (Currently Amended) A method according to claim 1 comprising using a digital processor ~~(22)~~ for ~~equalisation~~ equalization.
7. (Currently Amended) A method according to claim 1 using dedicated signal processing hardware ~~(22)~~ for ~~equalisation~~ equalization.
8. (Previously presented) A method according to claim 1 comprising de-interleaving, de-puncturing and incremental redundancy steps before convolutional decoding.

9. (Currently Amended) A computer program product directly loadable into the internal memory of a digital computer, comprising software code portions for ~~performing the steps of claim 1~~ processing a data signal when said product is run a computer by carrying out the steps of:

receiving a data sequence incorporating PSK symbols,

separating the data sequence into bits of symbols,

assigning a confidence value to each bit in a symbol, and

effecting convolutional decoding of the bit stream associated with the assigned confidence values.

10. (Currently Amended) ~~Apparatus~~ An apparatus for processing a data signal, the apparatus comprising:

means to receive ~~(10)~~ a data sequence incorporating PSK symbols,

mapping means ~~(28)~~ to map the data sequence into bits of symbols and to assign a confidence value to each bit in the symbols, and

means ~~(33)~~ to effect convolutional decoding of the bit stream associated with the assigned confidence values.

11. (Original) Apparatus according to claim 10 wherein the mapping means ~~(28)~~ is adapted to map symbols to binary bits by a Gray code.

12. (Currently Amended) ~~Apparatus~~ An apparatus according to claim 10, further comprising a look-up table incorporating data ~~on~~ from the mapping ~~determination for~~ reference means.

13. (Previously presented) Apparatus according to claim 10 comprising means to re-code hard decisions as an (I,Q) pair and means to take soft decisions therefrom.

14. (Currently Amended) Apparatus according to claim 10 comprising demodulation by decision feedback ~~equalisation~~ equalization with whitening matched filtering.

15. (Currently Amended) Apparatus according to claim 10 comprising a digital processor ~~(22)~~ for ~~equalisation~~ equalization.
16. (Currently Amended) Apparatus according to claim 10 comprising dedicated signal processing hardware ~~(22)~~ for ~~equalisation~~ equalization.
17. (Currently Amended) Apparatus according to claim 10 comprising means ~~(30,31,32)~~ to de-interleave, depuncture, and effect incremental redundancy before convolutional decoding.
18. (Cancelled)
19. (New) A look-up table produced by:
separating a received data sequence incorporating PSK symbols into bits of symbols;
for each bit in a symbol, assigning a confidence value to the bit based upon the position of the bit in its symbol; and
storing data indicating the assigned confidence value in a lookup table for use in effecting convolutional decoding of a bit stream.
20. (New) The method of claim 1, wherein the step of assigning a confidence value to each bit in a symbol includes assigning a confidence value based upon the position of the bit in its symbol.
21. (New) The apparatus of claim 10, wherein the mapping means assigns a confidence value to each bit in the symbols by assigning a confidence value based upon the position of the bit in its symbol.